Noon

813-5 **Serum Levels of High-Sensitive C-Reactive Protein Predict Restenosis After Stent Implantation in Patients With Unstable Angina**

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Background: It has been suggested that a systemic marker such as C-reactive protein (CRP) is higher in patients with unstable angina pectoris (UAP) than in those with stable angina pectoris. Persistent elevation of CRP in patients with UAP is predictive of future myocardial ischemia and infarction. However, an association between the serum levels of CRP and restenosis after coronary stent implantation in patients with UAP has not been fully elucidated. Therefore, this study was designed to determine whether CRP correlates with in-stent restenosis in patients with UAP. Methods: The study group consisted of 59 patients with UAP (mean age 65.2 ± 10.7 years, Braunwald type IB; n = 29, type IIB or IIIB; n = 30) who underwent successful coronary artery stenting (total; 73 coronary lesions). Patients with known inflammatory disease, heart failure, acute myocardial infarction, and chronic renal failure were excluded. Serum samples obtained from patients were immediately analyzed for high sensitive (hs-) CRP concentration, which was determined by the latex enhanced immunoassay. This assay has a detection limit of 2 μg /dl. A successful stenting was defined as a residual diameter stenosis of 50% of the lumen diameter as measured by quantitative computerized angiography at 6-month follow-up. Results: The hs-CRP serum levels were significantly higher in cases with restenosis (n = 20) than in those without restenosis (n = 53) (211.7 ± 43.7 vs. 114.5 ± 13.2 μg /dl, p = 0.006). Preprocedural minimal lumen diameter was significantly lower in restenotic group than in group without restenosis (0.45 ± 0.08 vs. 0.67 ± 0.06 mm, p = 0.049). The incidence of restenosis was significantly higher in cases with hs-CRP levels > 185 μg /dl than in those with hs-CRP levels < 185 μg /dl (47.4% vs. 20.4%, p = 0.028). On multivariate analysis, the preprocedural CRP level (> 185 μg /dl) was the only independent predictor of restenosis (relative risk [RR] = 2.22, p = 0.03). The clinical and demographic characteristics of the population were similar for the two groups at baseline. Conclusion: Our results suggested that serum levels of hs-CRP predict restenosis after stent implantation in patients with UAP.

POSTER SESSION

1099 Brachytherapy and Management of In-Stent Restenosis

Monday, March 31, 2003, Noon-2:00 p.m.
McCormick Place, Hall A
Presentation Hour: Noon-1:00 p.m.

1099-187 **Restenosis After Brachytherapy: Presentations and Outcomes**

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Background: Brachytherapy (BT) has been shown to reduce restenosis after coronary intervention. Little is known however regarding recurrence after BT restenosis. Because restenosis after BT is frequently at the irradiated edge, and therefore often focal, it is possible the recurrent restenosis rate is low. This study evaluated the clinical outcomes after treatment for post-brachytherapy restenosis (PBR).
Methods: 79 consecutive lesions of PBR were found over the past 3 years. Patients with clinical stent thrombosis (occlusions presenting as myocardial infarctions) were excluded. BT and PBR films were analyzed side by side. Patients were followed for recurrent events (TVR) after the PBR was treated with coronary intervention (PCI).
Findings: BT had been used for in-stent restenosis (62%) as well as de novo lesions. The PBR was focal (<10 mm) in 67% of lesions, attributable to geographic miss in 63% with edge restenosis in 66%. Seventy-two lesions with PBR were treated with an additional PCI, with one failure. Two others were treated with bypass surgery. Clinical follow-up was achieved in 91%, (median of 8 months, range 1-33). Total occlusions were seen in 16%, possibly due to late stent thrombosis. Incidence of recurrent restenosis, and for specific subsets, are shown in the Table.

Characteristic	Recurrent Restenosis Rate
Overall	45%
Focal PBR	49%
Edge restenosis	47%
Geographic miss	45%
Total occlusion PBR	29%
BT done for in-stent restenosis	44%
Gamma radiation	50%
Beta radiation	45%

Conclusions: Even though frequently focal, PBR is associated with a high incidence of recurrence, as well as a significant likelihood of late occlusion. Future investigations should address strategies to manage this condition.

1099-188 **Repeat Vascular Brachytherapy for Patients With In-Stent Restenosis Who Failed Radiation Therapy**

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Background: Patients treated with intracoronary radiation therapy (IRT) for in-stent restenosis (ISR) have recurrences and require repeat revascularization to the previuosly irradiated site. This study examined the safety and effectiveness of repeat radiation.
Methods: 69 patients with ISR who had recurrence of stenosis at a previously irradiated segment and were assigned for revascularization were treated with repeat IRT utilizing gamma Ir^{192} (n=26) with a prescribed dose of 15 Gy at 2 mm or beta (n=43) with either P^{32} dose of 20 Gy at 1.0 mm beyond the balloon surface or Sr/Y^{90} with a dose of 18 or 23Gy at 2 mm. The antiplatelet regimen was twelve months of clopidogrel.
Results: The mean age was 64 ± 11 years, 62.3% were males, 41.2% diabetics and 58.2% pts had previous CABG. Sixty one ISR lesions were in native coronary arteries, 5 in saphenous vein grafts and 2 in left internal mammary graft. The mean time interval between the two radiation treatments was 14.6 ± 9.1 months and the mean number of previous interventions to the target lesion was 3.9 ± 2.1. The radiation was delivered successfully in all patients with no procedural or hospital complications. At present 6 months clinical follow-up is available for 30 pts. (Table) No differences in events between beta or gamma were seen in patients that underwent repeat IRT to the same site.

Source	Ir-192 n=19	Sr/Y90 and P32 n=11	Total n=30
Death %	0	0	0
Any MI %	0	1 (9.1%)	1 (3.3%)
Late Thrombosis %	0	0	0
TLR %	4 (21.1%)	2 (18.2%)	6 (20%)
TVR MACE %	5 (26.3%)	3 (27.3%)	8 (26.7%)

Conclusions: Repeat radiation to the same site using either beta or gamma radiation for refractory ISR and failed IRT is safe and effective at 6 months.

1099-189 **Cutting Balloon Angioplasty Versus Rotational Atherectomy for Treatment of Diffuse In-Stent Restenosis: Multicenter Registry in Japan**

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Background: Diffuse in-stent restenosis (ISR) is still a challenging problem and optimal treatment has not been established.
Method: To compare the efficacy and safety of cutting balloon angioprasty (CB) versus Rotational Atherectomy with adjunctive balloon angioplasty (Rota), for the treatment of ISR, we studied 882 patients (1046 lesions) with a first ISR, 432 patients (512 lesions) received Rota and 450 patients (534 lesions) received CB. Basic characteristics in both groups are similar.
Results: See table for immediate and long-term clinical outcomes between CB and Rota.
Conclusions: These data shows that Rotational Atherectomy with adjunctive balloon angioplasty seems to offer a better long-term clinical outcome than cutting balloon angioplasty. Randomized trial is needed.